Course: ASTR 555
Term: Spring 2019
Room: HBH 254
Class: TR, 9:25 am - 10:40 am

ASTR 555 will meet in Herman Brown Hall room 254 on Tuesday and Thursday between 9:25 am and 10:40 am

Instructor Contact Information

Instructor: Dr. Andrea Isella
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Office Hours: after classes or by appointment.

Course Description

This course will discuss the major areas of active research within the field of star and planet formation, as well as exo-planetary science. Every six/seven years the international community holds a "Protostars and Planets" meeting. The latest, PP-VI (the sixth), was held in Heidelberg (Germany) on July 2013. Each group presenting an invited talk also writes a detailed review of about 20 pages on the subfield, so the PP books are a great resource for everyone in the area.

For ASTR 555, students will choose subject areas to give presentations to the class. Review articles are drawn from Protostar and Planet VI and more recent literature. Each presentation will last between 30 and 45 minutes, including questions. Each presentation should (1) draw a broad picture of the research field related to the selected chapter, (2) highlight the two/three main results of the chapter, and (3) discuss the current challenges and future prospects.

Learning Outcomes

The objective of the course is to provide an updated view of the scientific research within the fields of stellar formation, which spans from the study of the large scale structure of molecular clouds to the characterization of protostars, of planet formation, which comprises the study of proto-planetary disks, as well as of the processes responsible for the assembly of planets, and of exo-planetary science, which consists in the discovery and characterization of planets outside the Solar system.

The student learning outcomes of this course encompass a variety of knowledge and skills that apply scientific reasoning to an understanding of the universe, the bodies of which it is comprised, and the means by which we gather and interpret the information that lead to this understanding. At the end of the course, the students will have acquired an in depth understanding of the observational and theoretical challenges involved in the study of star and planet formation. Furthermore, they will have acquired the capability of read, understand, synthetize, and present long and (sometime) complex

scientific papers.

Required Texts and Materials

All the required material is available on line in pdf format. Paper copies will be provided upon request. The PP-VI book is available for purchase (not required). Recordings of the presentations and slides delivered at the PP-VI meeting are also available on line. Students' presentations might use figures from the on-line material (i.e., slides and movies) but they should substantially differ from the presentation delivered at PP-VI.

Exams and Papers

Each student will do a presentation every three weeks for a total of about 5 presentations per student. The exact number and schedule of the presentations will be decided during the first week of classes and will depend on the course attendance. Each presentation will last between 30 and 45 minutes, including questions. Each presentation should (1) draw a broad picture of the research field related to the selected chapter, (2) highlight the two/three main results of the chapter, and (3) discuss the current challenges and future prospects.

Students that are not presenting should read the review article before they come to class and be ready to ask questions and participate into the discussion.

Grade Policies

Students grade will be based on the quality of the presentations and on the participation to the discussion. The presentations will be graded based on the level of understanding of the material and on the capability of presenting it to the class. At the end of each presentation, each student in class will be asked to provide a short anonymous written review commenting on the quality and clarity of the presentation. These reviews will be used to establish a numerical score ranging between 0 to 100. The reviews will be collated and delivered to the speaker.
Student presentations will be reviewed based on the following criteria:

- Understanding of the scientific material
- Clarity of the presentation
- Quality of the slides

Absence Policies

Students that are unable to attend a class should send me an email as early as possible. If the student in charge of presenting is not able to attend a class, his presentation will be rescheduled for the following class.

Rice Honor Code

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations

for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

Students' presentations might use figures from on-line material (i.e., slides and movies) but they should avoid to reproduce entire slides form the presentations delivered at PP-VI.

Disability Support Services

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

Syllabus Change Policy

This syllabus is only a guide for the course and is subject to change with advanced notice.